

WE CLAIM:

1 1. A method for providing feedback during an inspection of an object, the
2 method comprising:
3 receiving first image data representing the object, the first image data being
4 produced using an image parameter;
5 determining parameter modification information for the image parameter from
6 the first image data;
7 modifying the image parameter to a modified image parameter with the
8 parameter modification information; and
9 receiving second image data representing the object, the second image data
10 being produced using the modified image parameter.

1 2. The method of Claim 1, wherein the image parameter is an image acquisition
2 parameter.

1 3. The method of Claim 2, wherein said determining includes processing the first
2 image data to calculate the parameter modification information for the image acquisition
3 parameter.

1 4. The method of Claim 2, wherein said producing the first image data includes
2 capturing a first image of the object, and wherein said producing the second image data
3 includes capturing a second image of the object.

1 5. The method of Claim 4, wherein said determining further includes
2 determining an incorrect classification of at least one feature of the object based on the first
3 image data as a result of an original setting of the image acquisition parameter, calculating
4 the parameter modification information to correct the incorrect classification and modifying
5 the original setting of the image acquisition parameter to a modified setting based on the
6 parameter modification information.

1 6. The method of Claim 5, wherein said producing the first image data includes
2 producing first raw image data representing the first image using the original setting of the
3 image acquisition parameter, and wherein said producing the second image data includes
4 producing second raw image data representing the second image using the modified setting of
5 the image acquisition parameter.

1 7. The method of Claim 2, wherein the image acquisition parameter is at least
2 one of an illumination parameter, resolution parameter, sensor parameter or image view
3 parameter.

1 8. The method of Claim 1, wherein the at least one parameter is an image
2 processing parameter.

1 9. The method of Claim 8, wherein said determining includes determining an
2 incorrect classification of at least one feature of the object based on the first image data as a
3 result of an original setting of the image processing parameter, calculating the parameter
4 modification information to correct the incorrect classification and modifying the original
5 setting of the image processing parameter to a modified setting based on the parameter
6 modification information.

1 10. The method of Claim 9, wherein said producing the first image data includes
2 processing raw image data representing an image of the at least one feature of the object
3 using the original setting of the image processing parameter to produce the first image data,
4 and wherein said producing the second image data includes processing the raw image data
5 using the modified setting of the image processing parameter to produce the second image
6 data.

1 11. The method of Claim 8, wherein the image processing parameter is at least
2 one of a processing type parameter or a processing complexity parameter.

1 12. A method for providing feedback during an inspection of an object, the
2 method comprising:

3 setting at least one image acquisition parameter to capture a first image of the
4 object;

5 determining parameter modification information from image data representing
6 the first image; and

7 modifying the image acquisition parameter based on the parameter
8 modification information to capture a second image of the object.

1 13. The method of Claim 12, wherein said determining includes processing the
2 image data to measure the parameter modification information.

1 14. The method of Claim 12, wherein said determining further includes
2 determining an incorrect classification of at least one feature of the object based on the image
3 data as a result of said setting.

1 15. The method of Claim 13, wherein said determining the parameter modification
2 information further includes determining the parameter modification information to correct
3 the incorrect classification and produce an adequate classification from the second image.

1 16. The method of Claim 12, wherein the image acquisition parameter is at least
2 one of an illumination parameter, resolution parameter, sensor parameter or image view
3 parameter.

1 17. An inspection system for providing feedback during an inspection of an
2 object, comprising:

3 a processor connected to receive first image data representing the object, the
4 first image data being produced using an image parameter, said processor being operable to
5 determine parameter modification information for the image parameter from the first image
6 data for use in producing second image data representing the object.

1 18. The inspection system of Claim 17, further comprising:

2 a sensor disposed in relation to the object to receive illumination projected
3 from the object, capture a first image of the object and produce first raw image data
4 representing the first image, said sensor being connected to provide the first raw image data
5 to said processor.

1 19. The inspection system of Claim 18, wherein said processor includes an image
2 analysis processor operable to process the first raw image data to produce first processed
3 image data.

1 20. The inspection system of Claim 19, wherein the first raw image data is the
2 first image data, and wherein the image analysis processor is operable to process the first raw
3 image data to measure the parameter modification information for the image parameter.

1 21. The inspection system of Claim 19, wherein the first processed image data is
2 the first image data, and wherein said processor further includes a classification processor
3 connected to receive the processed image data, determine an incorrect classification of at
4 least one feature of the object based on the processed image data as a result of an original
5 setting of the image parameter, calculate the parameter modification information to correct
6 the incorrect classification and modify the original setting of the image parameter to a
7 modified setting based on the parameter modification information.

1 22. The inspection system of Claim 21, wherein said sensor is further configured
2 to capture a second image of the object and produce second raw image data representing the
3 second image using the modified setting of the image parameter.

1 23. The inspection system of Claim 21, wherein said image analysis processor is
2 further operable to process the first raw image data using the modified setting of the image
3 parameter to produce second processed image data.

1 24. The inspection system of Claim 23, wherein the image parameter is at least
2 one of a processing type parameter or a processing complexity parameter.

1 25. The inspection system of Claim 18, wherein the image parameter is a sensor
2 parameter associated with said sensor.

1 26. The inspection system of Claim 25, wherein the sensor parameter is at least
2 one of an exposure duration of said sensor or a resolution associated with the first raw image

3 data.

1 27. The inspection system of Claim 18, wherein the image parameter is a view
2 parameter controlling the positional relationship between said sensor and the object.

1 28. The inspection system of Claim 18, further comprising:
2 an illumination source disposed in relation to the object to illuminate the
3 object, the image parameter being an illumination parameter controlling said illumination
4 source.

1 29. The inspection system of Claim 28, wherein said illumination source
2 illuminates the object with a beam of X-rays.

1 30. The inspection system of Claim 28, wherein said illumination source
2 illuminates the object with light